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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Harald Schmidt

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Workman Nydegger
1000 Eagle Gate Tower
60 East South Temple
Salt Lake City, UT 84111

EXAMINER

LEE, DANIEL HEON

ART UNIT

PAPER NUMBER

4122

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/533,996	Applicant(s) SCHMIDT, HARALD	
	Examiner DANIEL LEE	Art Unit 4122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 7 and 8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20060221</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claims 7 and 8 objected to because of the following informalities:
2. Regarding claim 7, element (a) should end with a comma, not a period.
3. Regarding claim 8, element (g), "carbon later" should be "carbon layer".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. **Claims 1-12 rejected under 35 U.S.C. 103(a) as being unpatentable over Loercks et al. (US 6062228) in view of Koster et al. (US 4291712) and Figlar et al. (US 6779529).**

7. Regarding claim 1, Loercks et al. (hereinafter Loercks) teaches a filter element for manufacturing tobacco smoke filters comprising a filtering material which

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substantially contains starch and/or a starch-based polymer mixture (see abstract; starch or its polymer compositions).

8. Regarding claims 3-6, Loercks teaches that the filter element containing the filtering material can consist of starch and/or a starch-based polymer mixture and that the mixture can be a foamed material or a fibrous material. Loercks also teaches that the use of natural fibers such as cellulose fibers and cotton fibers are known in the art (see abstract and col. 1; fibers, films, or foams... starch or its polymer compositions... cellulose acetate fiber). Loercks also teaches the filter element contains fibers in an amount of up to 30%, which encompasses the 5 percent by volume limitation as claimed (col. 1, lines 34-65; up to 30% water-soluble polymers, e.g. starches).

9. Regarding claim 7 and 8, Loercks teaches a method for manufacturing a filter element comprising the steps of continuously supplying a metered mixture of starch and/or a starch-based polymer mixture as well as further additives into an extruder system, heating and kneading the mixture at a defined temperature and pressure regime for forming a melt, extruding the melt through a nozzle, forming an extruded product having an air-permeable configuration, compressing the extruded product and forming a filtering material as an endless filter, separating the extruded filtering material into portions, and forming a filter element consisting of at least one filtering material portion.

10. Regarding claim 11, Loercks teaches the filtering material is formed of starch foam, biopolymeric films, or starch polymer films (see abstract).

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11. Regarding claim 12, Loercks discloses that further additives such as polyhydroxyl butyric acid (PHB) are published and known in the art (col. 1, lines 35-41) as a flowing assistant as well as optionally a foaming agent.

12. Further regarding claim 1, Loercks does not teach the filter element comprises pores and/or filter channels being open in the direction of the gas flow. Koster et al. (hereinafter Koster) teaches the filter element comprises pores and/or filter channels being open in the direction of the gas flow (see abstract; filter... provided with one or more axial channels). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide channels in the filter element so the total particle range comes in the smoker's mouth, so that the flavour is weakened but not deformed as taught by Koster (col. 1, lines 16-19).

13. Regarding claim 2, Loercks does not teach the elements claimed. Koster teaches the filter element comprises continuous filter channels extending substantially in the direction of the gas flow (see abstract). Koster does not expressly teach that the diameter of the filter channels lies in the range of 50 to 100 μ m. However, since the use of perforations (needles, laser, etc.) is well known in the art, it would be an intrinsic property of the channels to lie within the claimed range (see Koster, col. 1, lines 14-21; In a known construction, the channel...).

14. Regarding claim 9, Loercks does not teach the elements claimed. Koster teaches the filter channels are introduced into the filtering material portions before forming the filter element (col. 1, lines 56-60; exposed to the laser beam... prior to being cut to

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filters). It would have been obvious to one of ordinary skill in the art to introduce the filter channels before forming the filter element because the filter rods are cut to filters to form the filter element as taught by Koster. It would not be practical to introduce the channels into each filter element after the filter rod was cut (see Koster, col. 1, lines 48-65).

15. Regarding claim 10, Loercks does not teach the elements claimed. Koster teaches the filter channels are formed by a laser beam (see abstract; channels made by means of a laser beam). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the laser beam of Koster to create channels in the filter. The rationale to do so would have been that the channel weakens the flavor but does not deform it as taught by Koster (col. 1, lines 16-18; advantage that, at least in part... the flavour is weakened but not deformed).

16. Further regarding claim 1, Loercks and Koster do not teach the filter element is characterized in that the filtering material is arranged in alternatingly succeeding layers consisting of starch and/or a starch-based polymer mixture and activated carbon and the layers are stacked transversely with respect to the direction of the gas flow. Figlar et al. (hereinafter Figlar) teaches the filtering material is arranged in alternatingly succeeding layers (see Fig. 4) consisting of starch and/or a starch based polymer mixture and activated carbon and the layers are stacked transversely with respect to the direction of the gas flow (see Fig. 2 and col. 5, lines 41-42; cellulose acetate/charcoal). It would have been obvious to one of ordinary skill in the art at the time the invention

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was made to use the multiple section filter of Figlar. The rationale to do so would have been to reduce the level of predetermined smoke constituents as taught by Figlar (see abstract).

17. Further regarding claims 3-6, Loercks and Koster do not expressly teach the starch and/or starch-based polymer mixture forms a base material for activated carbon. Figlar teaches that the material forms a base for activated carbon (see Fig. 2 and claim 1; activated charcoal). It would have been obvious to one of ordinary skill in the art at the time of the invention to use charcoal in the filter element. The rationale to do so would be that charcoal has a high specific surface area and is a relatively strong adsorbent for vapor-phase constituents of tobacco smoke as well known in the art and as disclosed by Figlar (col. 1, lines 28-30).

18. Further regarding claim 8, Loercks and Koster do not expressly teach element (g). Figlar teaches the filter element consists of two or more filtering material portions and each comprising an activated carbon layer between subsequent filtering material portions (see Fig. 4). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the filter element of Figlar because the orientation as taught by Figlar produces a synergistic effect in smoke constituent reductions (see col. 2, lines 20-33).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 5568819 discloses a cigarette filter. US 4411280 discloses a ventilated thermoplastic polymer foam filter rods.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL LEE whose telephone number is (571)270-7711. The examiner can normally be reached on Monday-Thursday, 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571)272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. L./
Examiner, Art Unit 4122

/Timothy J. Kugel/
Primary Examiner, Art Unit 1796